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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/701,092
Filing Date: November 04, 2003
Appellant(s): PADIYAR ET AL.

Thomas G. Eschweiler
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/23/2008 appealing from the Office action mailed 5/29/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Claims 3, 5, and 22 were rejected under 35 USC Section 103(a) as being unpatentable over Ramakrishnan. Claim 7 was rejected under 35 USC Section 103(a) as being unpatentable over Ramakrishnan in view of Johnson (US 6,222,850). Claim 12 was rejected under 35 USC Section 103(a) as being unpatentable over Ramakrishnan in view of Fellman (US 6,751,231). Claim 3 was rejected under 35 USC 112 first paragraph. Claims 5,15,16, and 18-20 were rejected under 35 U.S.C. 112 second paragraph.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,418,784	RAMAKRISHNAN	5-1995
6,222,850	JOHNSON	4-2001
6,751,231	FELLMAN	6-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The Final Rejection filed 5/29/2008 is hereby reproduced for convenience:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention.

A steady state time period of 1 second is not enabled by the specification.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5,15,16, and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, the term "about" is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In claim 5, the term “about” renders the transmission and reception rate indefinite.

In claim 15, the limitation beginning with *setting an IPG* is confusing and unclear as written.

Claims 16 and 18-20 are rejected because they depend from a rejected claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,2,4,6,8-11, and 13-21 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Ramakrishnan (US 5,418,784).

Re claim 1:

Ramakrishnan discloses *a collision counter that tracks collisions* **(**Col.8 line 39 a collision counter**)**.

Ramakrishnan further discloses *a programmable inter packet gap* **(**Col.4 lines 3-5 “increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached”**)**.

Ramakrishnan further discloses *dynamically generating an IPG value as a function of the collision count and programmable parameters* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1)**)**.

Ramakrishnan discloses *the parameters including at least one of a range IPG values, a convergence time, and a stable state time* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval and Col.4 lines 3-5 “increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached**)**.

Ramakrishnan further discloses *programming the inter packet gap with the dynamically generated IPG value* **(**Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed”**)**.

Re claim 2:

Ramakrishnan discloses *generating the IPG value after a steady state time period* **(**Col.5 lines 24-33 the time for the node to learn of the collision is the round-trip propagation delay, a maximum of 51.2 microseconds - where the IPG value is adjusted after learning of a collision, so the value is steady for the time period it takes to learn of the collision**)**.

Re claim 4:

Ramakrishnan discloses *generating the IPG values by testing a plurality of IPG value and evaluating a number of collisions for each of the IPG values, where the IPG values range from 96 bit times to about 272 bit times* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where N is the number of collisions – where 9.6 microseconds is 96 bit times**)**.

Re claim 6:

Ramakrishnan discloses *storing the collision counts associated with the IPG value* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is

limited to a maximum of 51.2 microseconds where the collision count is inherently stored and it is associated with an IPG value based on the formula 9.6+10(N+1) where N is the number of collisions experienced**)**.

Re claim 8:

Ramakrishnan discloses *generating the IPG value as a function of an IPG range, a step value, a convergence time, and a stable state time* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval**)**.

Re claim 9:

Ramakrishnan further discloses *transmitting and receiving at 100 Mbps in half duplex* **(**Col.1 lines 21-23 the present invention may also be applicable to a 100 Mbps channel and Abstract "IEEE 802.3" where IEEE 802.3 defines a half duplex mode**)**.

Re claim 10:

Ramakrishnan discloses *a plurality of network stations* **(**Col.1 lines 9-10 and 28 local area networks (LANs) of the Ethernet type, where a LAN has a plurality of nodes**)**.

Ramakrishnan further discloses *a station dynamically generating IPG values according to tracked collision counts and programmable parameters* **(**Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced**)**.

Ramakrishnan further discloses *a station dynamically generating IPG values according to tracked collisions counts and programmable parameters* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1)**)**.

Ramakrishnan discloses *the parameters including at least one of a range IPG values, a convergence time, and a stable state time* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval and Col.4 lines 3-5 "increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached**)**.

Ramakrishnan further discloses *a network medium connecting the stations* **(**Col.1 lines 24-25 access to a network bus or cable, where the bus or cable connects nodes**)**.

Re claim 11:

Ramakrishnan discloses *parameters including an IPG range and a step value* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based

on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1)**)**.

Re claim 13:

Ramakrishnan discloses *setting one or more programmable parameters, which include at least one of a range of IPG values, a convergence time, and a stable state time* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval and Col.4 lines 3-5 “increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached**)**.

Ramakrishnan further discloses *dynamically determining an IPG value from the range of IPG values according to tracked collisions* **(**Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced**)**.

Ramakrishnan further discloses *programming the network device with the determined IPG value* **(**Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed”**)**.

Re claim 14:

Ramakrishnan discloses *testing one or more IPG values of the range of IPG values* **(**Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced where the IPG value is “tested” and if collision occurs, another IPG value is used**)**.

Ramakrishnan further discloses *obtaining respective collision counts for the tested IPG values* **(**Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced**)**.

Ramakrishnan further discloses *selecting an IP value that yields a lowest collision count* **(**Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed” and Col.8 lines 38-45 the IPG is computed based on the number of collisions experienced where the IPG value with the lowest collision count is used**)**.

Re claims 15,16, and 18:

Ramakrishnan discloses *programming an IPG current value to a network device* **(**Col.4 lines 14-15 “selecting an increased transmit-to-transmit interpacket gap (IPG) interval that must be observed”**)**.

Ramakrishnan further discloses *obtaining a current collision count over a selected time period* **(**Col.3 lines 66-68 to Col.4 line 1 selecting a progressively larger interval after every collision experienced**)**.

Ramakrishnan further discloses *setting an IPG modified value to the current IPG value with the current collision count* **(**Col.8 lines 38-45 the IPG is

computed based on the number of collisions experienced where the IPG value selected is the one with the lowest current collision count**)**.

Ramakrishnan further discloses *incrementing the IPG current value by a step value* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the step value is 10(N+1)**)**.

Re claim 17:

Ramakrishnan discloses *the programmable parameters including a step value, a convergence time, and a stable state time* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval**)**.

Re claims 19 and 20:

Ramakrishnan discloses *the IPG current value initially being 96 bit times and the step value being 1 bit time* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where N is the number of collisions**)**.

Re claim 21:

Ramakrishnan discloses *a stable state period* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the stable state time is a time slot interval, which is "about" 60 seconds**)**.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3,5, and 22 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan.

Re claim 3:

As discussed above, Ramakrishnan meets all the limitations of the parent claim.

Ramakrishnan further discloses *the steady state time period* **(**Col.5 lines 24-55 the time for the node to learn of the collision is the round-trip propagation delay, a maximum of 51.2 microseconds. The backoff time is selected from the range of 0 to 1,023 slot times - where the IPG value is adjusted after learning of a collision, so the value is steady for the time period it takes to learn of the collision**)**.

Ramakrishnan does not explicitly disclose *a steady state time period of 1 second*.

However, it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable dimensions by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 234 (CCPA 1955). Furthermore, where patentability is said to based upon particular chosen range or dimension recited in a claim, the Applicant must show that the chosen range or dimension is critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have 1 second in such a dimension as claimed, because the dimension is not critical since it can be optimized during routine experimentation that would yield predictable results.

Re claim 5:

As discussed above, Ramakrishnan meets all the limitations of the parent claims.

Ramakrishnan further discloses *the IPG values ranging from 96 bit times and overlapping 272 bit times* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where N is the number of collisions – where 9.6 microseconds is 96 bit times and 512 bit times overlaps 272 bit times**)**.

Ramakrishnan does not explicitly disclose *the IPG values having an upper limit of 272 bit times*.

However, it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 234 (CCPA 1955). Furthermore, where patentability is said to based upon particular chosen range or dimension recited in a claim, the Applicant must show that the chosen range or dimension is critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have an upper limit of 272 bit times in such a range as claimed, because the range is not critical since it can be optimized during routine experimentation that would yield predictable results.

Re claim 22:

As discussed above, Ramakrishnan meets all the limitations of the parent claims.

Ramakrishnan further discloses *a stable state period* **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the stable state time is a time slot interval**)**.

Ramakrishnan does not explicitly disclose *a stable state period of 60 seconds*.

However, it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable dimensions by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 234 (CCPA 1955). Furthermore, where patentability is said to based upon particular chosen range or dimension recited in a claim, the Applicant must show that the chosen range or dimension is critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have 60 seconds in such a dimension as claimed, because the dimension is not critical since it can be optimized during routine experimentation that would yield predictable results.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan in view of Johnson (US 6,222,850).

Re claim 7:

As discussed above, Ramakrishnan meets all the limitations of the parent claims.

Ramakrishnan discloses

It is well known to one of ordinary skill in the art that a device has a driver to controls its functions; however, Ramakrishnan does not explicitly disclose *the IPG determiner and storage unit being part of a device driver*.

Johnson discloses *the IPG determiner and storage unit being part of a device driver* **(**Col.3 lines 37-38 “the device driver artificially extends the IPG" and Col.4 lines 24-25 The device driver manages a device driver buffer**)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the IPG determining and storage unit as part of a device driver as taught by Johnson in order to maintain control of a device accessing a network.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan in view of Fellman (US 6,751,231).

Re claim 12:

As discussed above, Ramakrishanan meets all the limitations of the parent claim.

Ramakrishnan further discloses *tracking the number of collisions* **(**Col.8 line 39 a collision counter**)**.

Ramakrishnan does not explicitly disclose *tracking throughput and modifying the IPG value to achieve a desired throughput*.

Fellman discloses *tracking throughput and modifying the IPG value to achieve a desired throughput* **(**Abstract the device adapters may support latency and throughput guarantees for real-time traffic by modifying the back-off protocol and Col.12 lines 54-58 the interpacket gap may be reduced and Col.14 lines 28-48 a throughput guarantee is provided and waiting for a time longer than IPG and Col.3 lines 45-62 waiting a random amount of time until attempting

transmission again is known as backing off. The waiting time changes based on the collisions.).

Ramakrishnan and Fellman are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ramakrishnan to include modifying the IPG value to achieve a desired throughput as taught by Fellman in order to meet quality of service guarantees.

(10) Response to Argument

Appellant's arguments of the Appeal Brief filed 12/23/2008 have been fully considered but they are not persuasive.

On pgs.6-10, Appellant contends that Ramakrishnan does not disclose or suggest using programmable parameters to generate an IPG value.

The Examiner respectfully disagrees. The term programmable is a broad term and does not carry a specific meaning in the art. The claims and specification do not specify in what manner the parameters are programmable, other than stating that "multiple stations can be controlled and programmed by a network coordinator that sets programmable parameters for dynamic IPG generation" (Pg.4 lines 21-24). Ramakrishnan generates an IPG value using programmable parameters (Col.8 lines 38-45 the IPG is computed as a linearly

increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval and Col.4 lines 3-5 “increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached**)**. The range of IPG values is up to 51.2 microseconds, so the IPG value generated is a function of the IPG range, amongst other parameters. The IPG range, step value, the convergence time, and the stable state time of Ramakrishnan are programmed parameters as understand by the broad meaning of the term programmable. The Examiner would like to further note, with respect to the independent claims 1,10, and 13, the programmable parameters are written in the alternative language, only requiring one of the listed parameters to meet the claim limitation of generating an IPG value as a function of a programmable parameter.

On pg.7, Appellant contends that the IPG value in Ramakrishnan is automatically generated and not programmable as defined by the specification.

The Examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., a programmable IPG value) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not

read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the IPG value in Ramakrishnan is based on programmable parameters **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1).**)**.

On pgs.7-10, Appellant contends the slot time and time after collision of Ramakrishnan are not equivalent to the stable state time and convergence time, respectively, as defined in the Appellant's specification.

The Examiner respectfully disagrees. In response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., a stable state time being a period for which IPG values obtained remain programmed in the network device without modification and a convergence time being the time period for which the dynamic determiner is permitted to obtain an improved IPG value) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, the terms stable state time and convergence time are broad terms and do not carry a specific meaning in the art. The slot time of Ramakrishnan reads on the claim limitation of a stable state time. The IPG value in Ramakrishnan can remain stable for a slot time because during a transmission if

a collision does not occur, the IPG value will not change. The time after a collision in Ramakrishnan reads on the claim limitation of a convergence time because it is after a collision occurs that the IPG value is changed **(**Col.3 lines 66-68 selecting an increased transmit-to-transmit IPG interval includes selecting a progressively larger interval after each collision**)**.

On pg.9, Appellant contends Ramakrishnan does not disclose generating an IPG value as a function of either a convergence time or a stable state time.

The Examiner respectfully disagrees. As previously stated, Ramakrihnan does disclose generating an IPG value as a function of either a convergence time or a stable state time **(**Col.8 lines 38-45 the IPG is computed as a linearly increasing value based on the number of collisions experienced by 9.6+10(N+1). The value is limited to a maximum of 51.2 microseconds where the range is from 9.6 to 51.2 microseconds, the step value is 10(N+1), the convergence time is the time after a collision, the stable state time is a time slot interval and Col.4 lines 3-5 "increasing the IPG interval in equal steps until a maximum value equal to one slot time is reached**)**.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Mohammad S Adhami/

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Conferees:

/Chi H Pham/

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